Electronic TUBES

6BN4—2BN4—3BN4

TRIODE

FOR VHF TV RADIO-FREQUENCY AMPLIFIER APPLICATIONS

DESCRIPTION AND RATING

The 6BN4 is a miniature medium-mu triode primarily intended for use as a radio-frequency amplifier in VHF television tuners. The electrical characteristics of the 6BN4 are similar to those of each section of the 6BZ7.

Except for heater ratings, the 2BN4 and 3BN4 are identical to the 6BN4. In addition, they incorporate a controlled heater-warm-up characteristic which makes them especially suited for use in television receivers that employ series-connected heaters.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential	2BN4	3BN4	6BN4	
Heater Voltage, AC or DC	2.3	3.0	6.3±10%	Volts
Heater Current	0.6±6%	0.45±6%	0.2	Amperes
Heater Warm-up Time*	11	11		Seconds

Direct Interelectrode Capacitances†

Grid to Plate	1.2	μμf
Input	3.2	μμf
Output	1.4	μμf
Heater to Cathode	2.8	μμf

MECHANICAL

Mounting Position—Any
Envelope—T-5½, Glass
Base—E7-1, Miniature Button 7-Pin

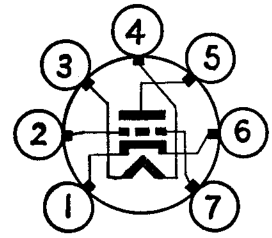
MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

Plate Voltage	275	Volts
Positive DC Grid Voltage	0	Volts
Plate Dissipation	2.2	Watts
DC Cathode Current	22	Milliamperes
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode	100	Volts
Heater Negative with Respect to Cathode	100	Volts
Grid Circuit Resistance	0.5	Megohms

Design Maximum Ratings are the limiting values expressed with respect to bogie tubes at which satisfactory tube life can be expected to occur. To obtain satisfactory circuit performance, therefore, the equipment designer must establish the circuit design so that no design-maximum value is exceeded with a bogie tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, and environmental conditions.

BASING DIAGRAM

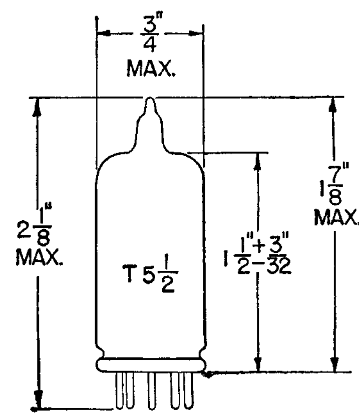


RETMA 7EG

TERMINAL CONNECTIONS

Pin 1—Cathode
Pin 2—Grid
Pin 3—Heater
Pin 4—Heater
Pin 5—Plate
Pin 6—Cathode
Pin 7—Grid

PHYSICAL DIMENSIONS



RETMA 5-2

CHARACTERISTICS AND TYPICAL OPERATION

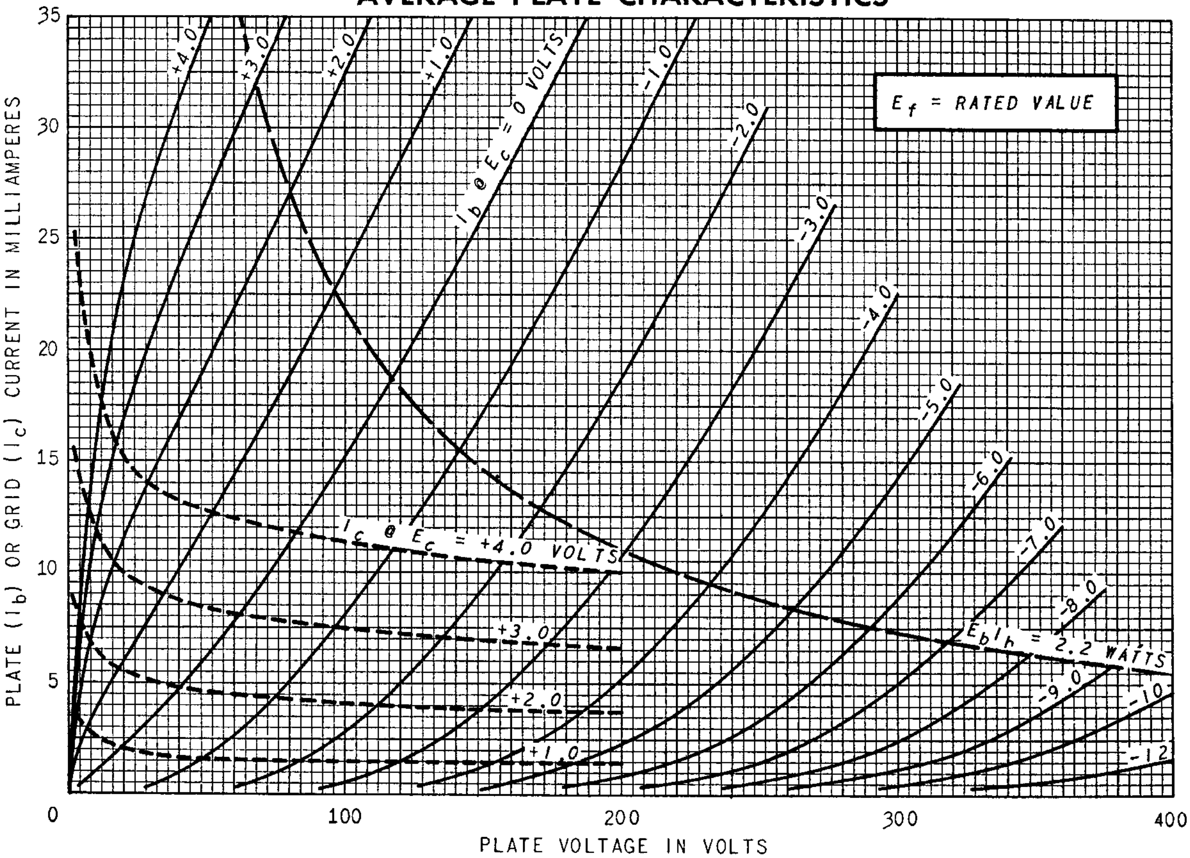
CLASS A₁ AMPLIFIER

Plate Voltage	150 Volts
Cathode-Bias Resistor	220 Ohms
Amplification Factor	43
Plate Resistance, approximate	6300 Ohms
Transconductance	6800 Micromhos
Plate Current	9.0 Milliamperes
Grid Voltage, approximate	
Ib = 100 Microamperes	−6 Volts

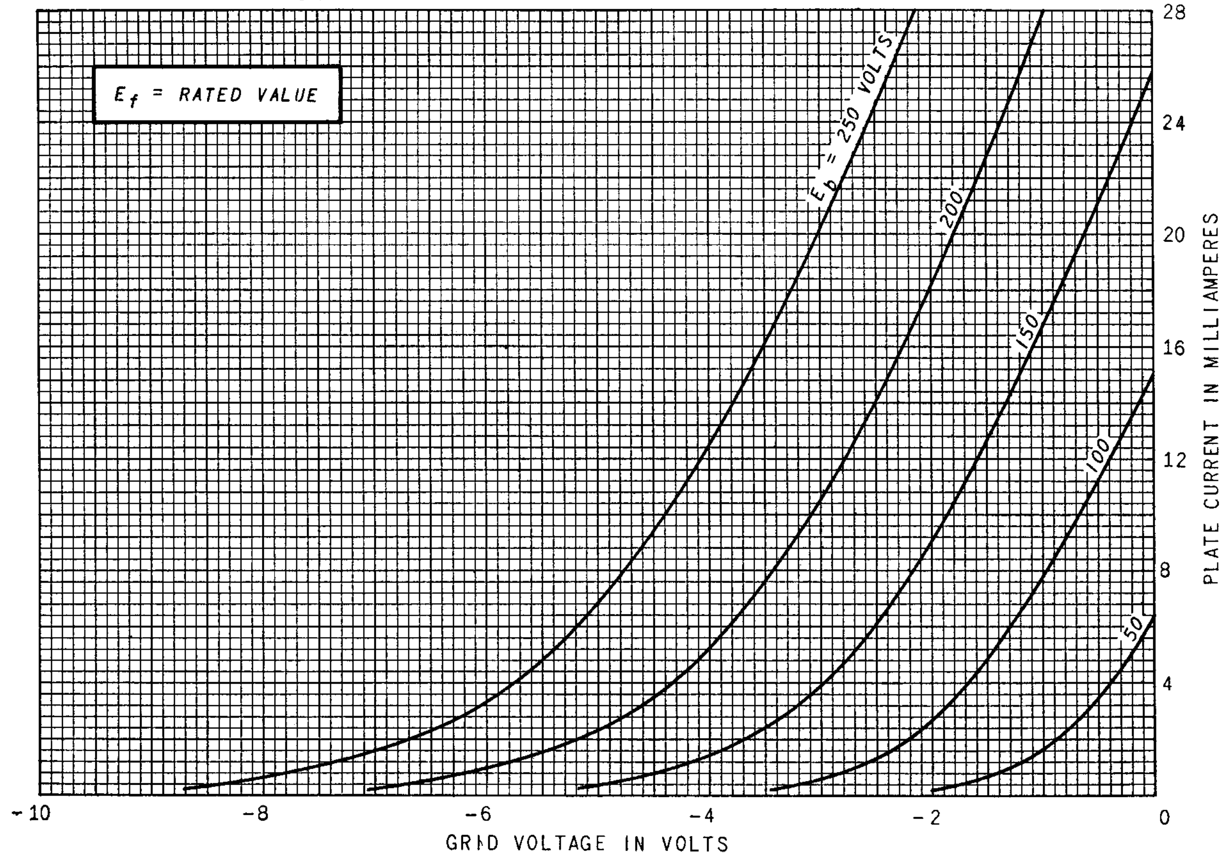
* The time required for the voltage across the heater to reach 80 percent of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the rated heater voltage divided by the rated heater current.

† With external shield (RETMA 316).

AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE CHARACTERISTICS

